

WHAT IS CLAIMED IS:

1. A tire air pressure abnormality warning device comprising:

5 a transmitter for transmitting a signal that corresponds to air pressure of a tire measured by a pressure sensor;

a portable keyless entry device for opening and closing a door lock of a vehicle; and

a vehicle-installed device for determining whether or
10 not the air pressure of the tire is abnormal by receiving the signal from the transmitter in order to output data regarding the determination, the vehicle-installed device driving the door lock by communication with the portable device;

wherein the vehicle-installed device comprises a
15 recording section for recording data of any abnormality in the air pressure of the tire,

wherein the portable device comprises a warning indicating section for indicating that the air pressure of the tire is abnormal,

20 wherein the vehicle-installed device searches for any abnormality data from the recording section when the vehicle-installed device communicates with the portable device, so that, when there is abnormality data, a tire air pressure abnormality signal is transmitted to the portable device, and

25 wherein the portable device indicates a warning of an abnormal air pressure of the tire by the tire air pressure abnormality signal that the portable device has received.

2. A tire air pressure abnormality warning device according to Claim 1, wherein the communication between the vehicle-installed device and the portable device is a passive keyless entry communication using a request signal from the vehicle-installed device and an answer signal from the portable device, and wherein the tire air pressure abnormality signal is transmitted along with the request signal.

3. A tire air pressure abnormality warning device according to Claim 2, wherein a door of the vehicle comprises a door touch switch, and wherein the request signal and the tire air pressure abnormality signal are transmitted by operating the door touch switch.

4. A tire air pressure abnormality warning device according to either Claim 1, wherein the transmitter periodically measures the air pressure of the tire and transmits the measured value to the vehicle-installed device, and wherein, when the vehicle-installed device determines that the air pressure of the tire is abnormal, the vehicle-installed device records abnormality data in the recording section, with a driver taking out the data from the recording section at a timing in which the driver gets into or out of the vehicle.

5. A method for performing a tire air pressure abnormality warning operation using a transmitter for

transmitting a signal that corresponds to air pressure of a tire measured by a pressure sensor, a portable keyless entry device for opening and closing a door lock of a vehicle, and a vehicle-installed device for determining whether or not the
5 air pressure of the tire is abnormal by receiving the signal from the transmitter in order to output data regarding the determination, the vehicle-installed device driving the door lock by communication with the portable device, the method comprising the steps of:

10 by the vehicle-installed device, determining that the signal transmitted from the transmitter indicates an abnormality in the air pressure of the tire and recording abnormality data in a recording section;

during communication of the vehicle-installed device
15 with the portable device, by the vehicle-installed device, searching for any abnormality data from the recording section and, if there is any abnormality data, transmitting a tire air pressure abnormality signal to the portable device; and

by the portable device, indicating a warning of abnormal
20 air pressure of the tire by the tire air pressure abnormality signal using a warning indicating section.